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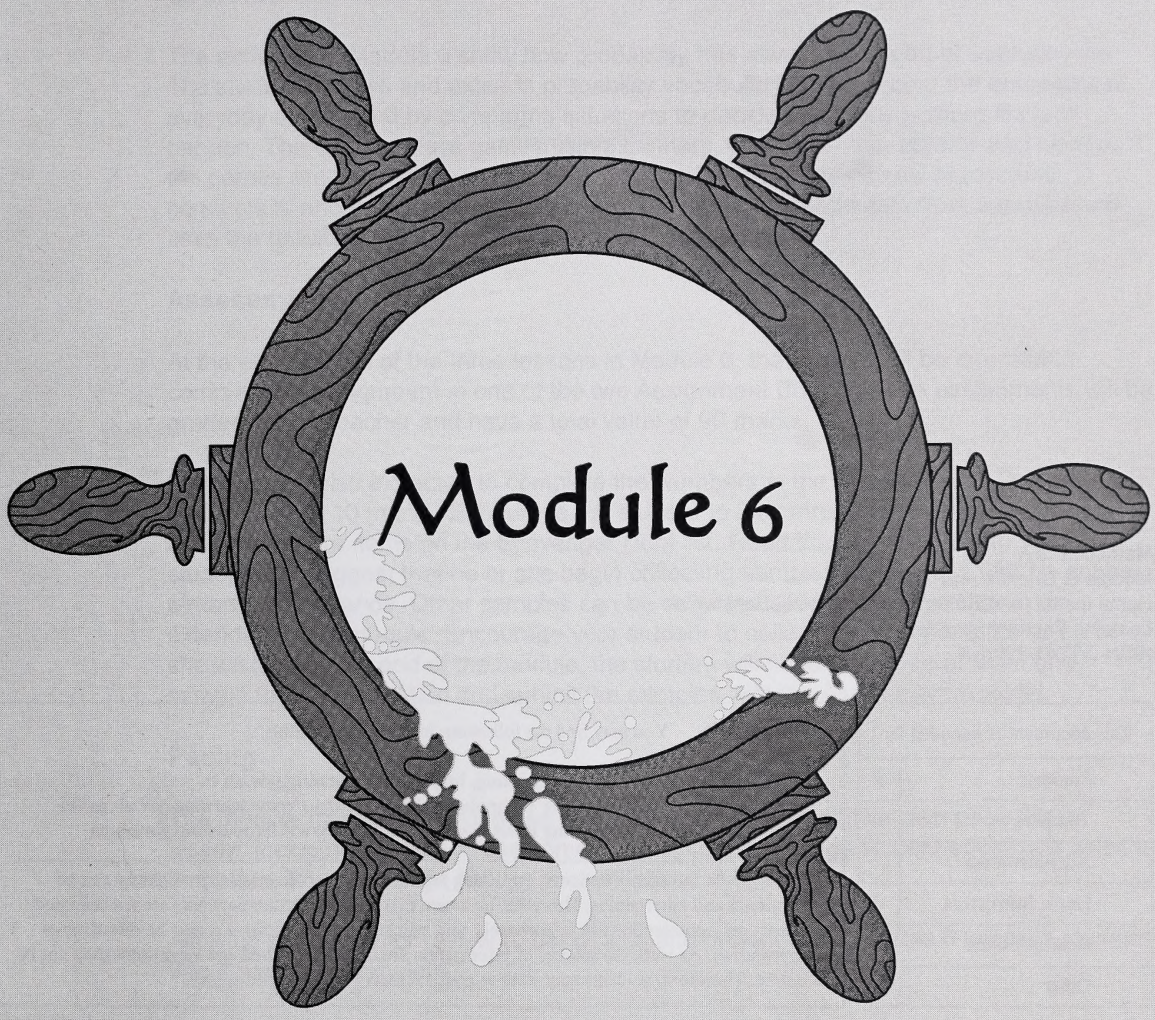
Mathematics 5



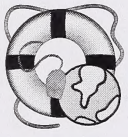
Home Instructor's Guide and Assignment Booklet 6A

Learning Technologies Branch

Alberta LEARNING

Mathematics 5
Module 6: Chance and Uncertainty
Home Instructor's Guide and Assignment Booklet 6A
Learning Technologies Branch
ISBN 0-7741-2055-X

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
Other	



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Module 6: Chance and Uncertainty

Overview

The activities in Module 6 show how probability has always been part of everyday life. The student reviews and extends probability vocabulary by describing the outcomes of everyday events and by comparing situations to decide which one is more likely to happen. The student plays games using spinners, dice, and other objects and decides if the games are fair. The student lists all the possible outcomes for an experiment, conducts it, and then explains the results. The student collects data from samples and uses the results to make predictions about the populations.

Assessment

At the end of each of the three lessons in Module 6, the student will be directed to complete an assignment in one of the two Assignment Booklets. The assignments will be graded by the teacher and have a total value of 90 marks.

Students are also expected to complete the Numbers in the News project. This project has a value of 10 marks. Encourage the student to look through a newspaper at least once a week for items on the Scavenger Hunt list. Read through the list with your student and suggest that he or she begin collecting samples of the ideas that he or she already understands. Other samples can be collected as ideas are introduced or extended in the module. Encourage your student to collect as many samples as he or she wishes. At the end of the module, the student will need to choose at least one sample for each question and submit the samples with the Assignment Booklet.

Pacing

The module has been designed so that students can work at their own pace. Each lesson, including the lesson assignment, will take the average student about one week to complete. The Challenge Activity in each lesson is optional.

Allowing extra time for review of basic facts and project work, Module 6 will take students 3 to 4 weeks to complete.

Lesson 1: Describing the Chances

Overview

In this lesson the student will review and extend probability vocabulary for describing the chances of events happening. The student will decide what events are possible in everyday situations and describe the likelihood that they will happen. The student will compare situations to decide which one is more likely to happen, and explain why.

Special Requirements

There are no special materials needed for this lesson.

Sharing Time

Students are asked to discuss what they are learning at the end of Activity 2.

Activity 2 Sharing Time

Practice and Homework Book, page 80, questions 1 to 2

1. a. certain
   b. impossible
   c. probable or possible
   d. possible or improbable
   e. improbable

2. Answers will vary. A sample response is given.

   a. A bird flies to the moon.
   b. It is cold in winter in Inuvik.
   c. It will snow in Edmonton in February.
   d. There will be a astronaut on Titan before 2015.

Lesson 2: Investigating Chance

Overview

In this lesson the student will conduct experiments and play games. The student will list all the possible outcomes for an experiment, conduct the experiment, and then explain the results. The student will discuss fairness. The student will make spinners, predict the results when using them, and then use the spinners to check the predictions.

Special Requirements

You may gather the following materials for your student to use in this lesson:

- a regular six-sided die
- a paper clip
- a paper cup
- a jelly powder box
- a hexagonal pencil
- thumbtacks

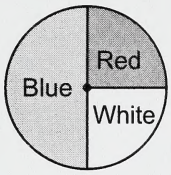
Sharing Time

Students are asked to discuss what they are learning at the end of Activity 3.

Activity 3 Sharing Time

Practice and Homework Book, page 82, question 1

This exercise is open-ended, so answers will vary. However, some sample responses are given.



Colour	Prediction	Tally
Red	15	𝍸 𝍸 |||
White	15	𝍸 𝍸 𝍸 |
Blue	30	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 |

The tallies are close to the predicted values. There were almost one-quarter red spins, one-quarter white spins, and one-half blue spins.

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ASSIGNMENT BOOKLET 6A

Mathematics 5
Module 6: Lesson 1 Assignment and Lesson 2 Assignment

Home Instructor's and Student's Comments:

STUDENT FILE NUMBER
(if label is missing or incorrect)

_____

Date Submitted:

_____

Apply Module Label Here

Name

Address

Postal Code

Please verify that preprinted label is for correct course and module.

FOR SCHOOL USE ONLY

Assigned Teacher:

_____

Date Assignment Received:

_____

Grading:

_____

Teacher's Comments

_____
Teacher's Signature

Home Instructor: Keep this sheet when it is returned to you as a record of the student's progress.

INSTRUCTIONS FOR SENDING IN THIS DISTANCE LEARNING ASSIGNMENT BOOKLET

When you register for distance learning courses, you are expected to send in Assignment Booklets for corrections regularly. Try to send each Assignment Booklet as soon as you have completed it. Before sending your Assignment Booklet, please check the following:

- Are all the assignments completed? If not, explain why.
- Has your work been reread to be sure the spelling and details are correct?
- Is the record form filled out and the correct module label attached?

MAILING

1. Postage Regulations

Do **not** enclose letters with Assignment Booklets.

Send all letters in a separate envelope.

2. Postage Rates

Take your Assignment Booklet to the post office and have it weighed. Attach enough postage and seal the envelope. Assignment Booklets will travel faster if correct postage is used and if they are in large envelopes that are no more than two centimetres thick.

FAXING

1. Assignment Booklets may be faxed. Contact your teacher for the fax number.

2. All faxing costs are the responsibility of the sender.

E-MAILING

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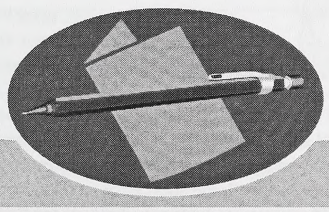
Mathematics 5

Module 6

Chance and Uncertainty

Assignment Booklet 6A



Learning Technologies Branch

Alberta LEARNING

FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Lesson 1 Assignment	30	
Lesson 2 Assignment	30	
	60	

Teacher's Comments

Mathematics 5
Module 6: Chance and Uncertainty
Assignment Booklet 6A
Lesson 1 Assignment and Lesson 2 Assignment
Learning Technologies Branch

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ASSIGNMENT BOOKLET 6A
MATHEMATICS 5—MODULE 6: CHANCE AND UNCERTAINTY

Your mark on this module will be determined by how well you do your assignments in the Assignment Booklets.

Work slowly and carefully. If you are having difficulties, go back and review the appropriate lessons.

There are two lesson assignments in this Assignment Booklet. The total value of these assignments is 60 marks. The value of each assignment is stated in the left margin.

Be sure to proofread each assignment carefully.

(30)

Lesson 1 Assignment: Describing the Chances

1. Use a probability term to explain the meaning of each of the following sayings.

certain		probable		possible		improbable
	impossible		likely		unlikely	

(2) **a.** "Snow like meal, snow a great deal." **Note:** Mealy snow is dry and powdery like ground grain, especially corn meal.

(2) **b.** "When the sun sets bright and clear, an easterly wind you need not fear."

(2) **c.** "When leaves show their back, rain we won't lack."

(2) **d.** "Moss dry, sunny sky, moss wet, rain we will get."

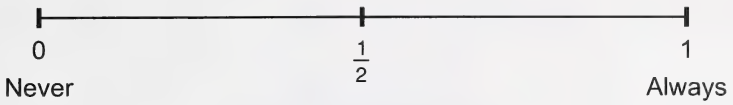
2. For each of the following games, use probability terms to explain in what way, if any, the results are influenced by age, experience, or skill.

(2) **a.** the card game called Go Fish

(2) **b.** the board game called Snakes and Ladders

(2) **c.** the board game called Checkers

(5) **3.** Mark and label points a, b, c, d, and e on the number line below to show how likely it is that each of the events would happen.



a. The farmer is heavier than the pumpkin he grew.

b. The mother is older than her child.

c. The kite is flying higher than the airplane.

d. A card drawn from a deck will be black.

e. You could jump up as high as an apartment building.

4. Use probability words to compare the events in each question. Explain.

(2) **a.** The North Saskatchewan River will be frozen in July.
The North Saskatchewan River will be frozen in December.

_____

_____

_____

_____

(2) **b.** A St. Bernard dog can pull an accident victim to safety.
A poodle can pull an accident victim to safety.

_____

_____

_____

_____

(2) **c.** You can outrun a healthy dog.
You can outrun a healthy cat.

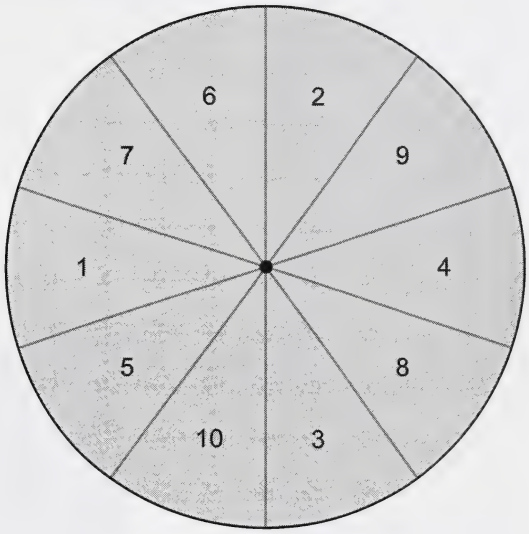
(2) **d.** The grocery store will be open at 2:00 **P.M.**
The grocery store will be open at 3:00 **P.M.**

(3) **5.** Describe something that is more likely to be done by adults than by children. Explain.

(30)

Lesson 2 Assignment: Investigating Chance

1. To win a game, Wui-Ching needs to spin a 6 or any of its factors on the spinner.



(2) **a.** Do you think Wui-Ching is more likely to win or lose the game? Explain.

_____

_____

_____

(3) **b.** Make 50 spins and record the results on the tally chart. Use a paper clip as a pointer like you did in Lesson 2.

Number Spun	Tallies	Frequency
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
	Total	

(2) **c.** Compare your prediction with your results. Explain.

_____

_____

_____

_____

2. Alison also needs 6 or any of its factors to win her game, but she is using a regular die rather than a spinner like Wui-Ching's.

(2) **a.** Predict whether Alison is more likely to win her game than Wui-Ching. Explain.

(3) **b.** Make 50 tosses and record the results on the tally chart below.

Number Spun	Tallies	Frequency
1		
2		
3		
4		
5		
6		
	Total	

(2) **c.** Compare your prediction with your results. Explain.

3. Yvon tossed 20 tacks. Thirteen tacks landed on their points. He used the fraction $\frac{13}{20}$ to describe the probability of tossing "points."

Top

Point

(2) **a.** Yvon says he can now predict 39 "points" if he tosses 60 tacks. Explain his reasoning.

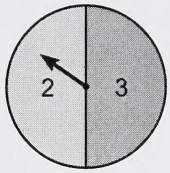
(2) **b.** Conduct an experiment to test Yvon's prediction. Toss 60 tacks and record your results in the table.

How Tacks Landed	Tallies	Frequency
Points		
Tops		
	Total	

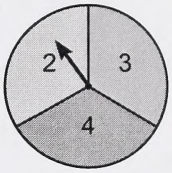
(2) **c.** Compare your results with Yvon's prediction.

(2) **d.** If you continue to conduct experiments with tacks, will you improve your ability to toss exactly the number you predict? Explain.

4. Make up a true statement about one or both of the spinners by using each of the probability terms given.



Spinner A



Spinner B

(2) **a.** never

(2) **b.** less likely

(2) **c.** more likely

(2) **d.** always

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